



February 10, 2005

Mr. Nabil S. Fayoumi
U. S. EPA - Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

**Re: Sauget Area 2 Site – October 3, 2002 Unilateral Administrative Order
(UAO) Groundwater Operable Unit
Monthly Report; January 1 - January 31, 2005 Reporting Period**

Dear Nabil:

Attached is the Monthly Report for the Sauget Area 2 Site October 3, 2002 Unilateral Administrative Order (UAO) - Groundwater Operable Unit. This submittal is in fulfillment of the monthly reporting requirements of the UAO, Section XII, paragraph 62, Progress Reports. This report is for the period January 1 – January 31, 2005.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven D. Smith".

Steven D. Smith
Project Coordinator

cc: Ken Bardo, - U. S. EPA
Mayor Sauget - Sauget, IL
Sandra Bron – IEPA
Mike Coffey - USFWS
Village of Sauget – c/o P. H. Weis & Associates (Attn: Brian Nelson)
Mayor Frank Bergman – Cahokia
L. Glen Kurowski - Monsanto
Cathleen Bumb – Solutia
Linda Tape - Husch & Eppenberger
Richard Williams – Solutia

Sauget Area 2 Site - Sauget, Illinois

October 3, 2002 UAO – Groundwater Operable Unit

Status Report

Date of Report: February 10, 2005
Period Covered: January 1 - January 31, 2005

Agency Actions / Communications

In an e-mail message dated June 19, 2003, U. S. EPA requested the submission of revised versions of the Focused Feasibility Study, the Remedial Design Work Plan, and the Pre-Final (95%) Remedial Design. The revisions were required to allow the use of a slurry wall rather than jet grouting for construction of the barrier wall. The revised documents were submitted on July 3, 2003. The ESD was issued by US EPA on July 30, 2003. The Final Design Submittals were approved by EPA on October 16, 2003.

Work Performed During the Reporting Period

Slurry Wall

- Stabilization of the excess slurry by the addition of cement was delayed for the entire month because of unusually heavy rains in the first half of the month and then cold temperatures in the second half of January. This activity will resume in February, weather permitting.
- Site cleanup and rough grading continued in the central portion of the site. However, weather severely hampered progress on this activity. The bad weather also prevented completion of the remaining section of the slurry wall cap between Stations 25+25 and 26+00. This will be completed as soon as the weather permits.
- The Agreement with the slurry wall contractor, Inquip Associates, was terminated with an effective date of the later of December 31, 2004, or as soon as possible thereafter upon completion of the slurry wall cap. A contract with a local construction contractor, Philip Environmental Services Corporation (PSC), was signed on December 21, 2004 and PSC will complete the stabilization and grading activities that remain to be done at the site. PSC assumed responsibility for stormwater management at the site on December 31, 2004 and carried out

those activities during the month of January. Inquip completed demobilization of all personnel and equipment by the middle of January and will remobilize the necessary crews and equipment to complete the slurry wall cap when weather permits.

Groundwater Treatment

- A report summarizing the piezometer maintenance and replacement activities completed during the month of October was submitted to the Agencies on November 9, 2004. That report also contained recommendations for future operation of the groundwater extraction system. The contents of the report were summarized at a meeting held at the site on November 16th. The following maintenance activities were identified as being necessary:
 - Redevelopment of all piezometers.
 - Replacement of all piezometer sensors with more robust and sensitive sensors. The new sensors are between 5 and 10 times more sensitive than the existing installations.
 - Installation of remotely actuated plug valves on the discharge lines from each extraction well. This will allow control of the flow rates from the individual wells during low flow conditions (less than 100 gpm per well).

The report also provided recommendations for future operation of the groundwater extraction system. Because of rapid changes in the river levels and the interdependence of the individual piezometer levels, it has proven impossible to develop an algorithm that will reliably control the pumping rate such that individual piezometer pairs will show zero gradients across the wall at all times. However, we have developed an algorithm that can be used to control the pumping rate such that the median groundwater level inside the wall is less than, or equal to, the median level outside the wall. It is Solutia's belief that this is the functional equivalent of the ROD requirements and, as such, satisfies those requirements. Consequently, it was proposed that the system be operated for 90 days, during which time, the median groundwater level inside the wall would be kept below, or at the same level, as the river. This would allow time to optimize the control algorithm to account for the effects of the wall. At the end of the 90 day period, a report would be submitted to the agencies. That report would contain a review all of the piezometric responses measured during the 90 day period and would evaluate whether groundwater discharge to the river can be controlled by use of median groundwater levels.

- After EPA reviewed the report, EPA requested that we attempt to operate the system for the proposed 90 day period in such a way that the inside piezometric level at each piezometer pair is equal to, or less than, the level in the corresponding outside member of the pair.

- For the entire month, the system was operated in this way. For the first few days of the month, the river level was extremely low and the water levels in the inside members of piezometer pairs PZ -2 and PZ-3 exceeded the water levels in the outside members. However, an inward gradient was maintained across the northern and southern arms of the barrier wall, at piezometer pairs PZ-1 and PZ-4, at all times, demonstrating that groundwater discharge was under control during the entire period. The outside piezometer elevations rose rapidly on or about January 4th and remained high for approximately the next week. The levels began to drop at that point and by the end of the month, the level in the inside member of the PZ-2 piezometer pair was higher than the level in the outside member.
- Redevelopment of all eight of the water level piezometers began on January 17th and was completed on January 24th. During this time, the sensors in each of the piezometers was replaced with more sensitive and rugged instruments and the installations were recalibrated.
- Following piezometer redevelopment and replacement of the sensors, and with agreement from the EPA, the system controller was reprogrammed to automatically control the flow rates of the individual pumps on the basis of the head differential between the inside and outside members of individual piezometer pairs. Extraction well EW-1 was set to respond to the head differential across piezometer pair PZ-1, while well EW-2 was programmed to respond to the smaller of the head differentials across the PZ-2 and PZ-3 pairs. Well EW-1 was set to respond to the head difference across the PZ-4 pair.
- Daily average pumping data for each well are attached, together with the daily average piezometric levels. Several individual entries are entered as "NA" in this table. These entries correspond to the days that the specific installation was out of service for redevelopment and recalibration.

Schedule

A new construction schedule was submitted in April showing backfill completion by the middle of November. This schedule was satisfied.

Submittals During Reporting Period

There were no submittals to the Agency during the reporting period.

Work Scheduled for Next Reporting Period

- Continue pumping and treating groundwater based on piezometric levels. Flow rates will be controlled in an attempt to keep the water level in each of the piezometers inside the barrier wall less than, or equal to, the water level in the corresponding piezometer outside the wall.

- Finish constructing the cap on the slurry wall.
- Complete mobilization of PSC construction equipment and labor.
- Continue final site cleanup.
- Continue solidifying excess slurry in the containment cell on top of Site R.

PUMPING DATA

JANUARY 2005 DAILY AVERAGE WATER LEVELS

Date/Time		PUMPING RATE				SWL	GROUNDWATER LEVEL (OUTSIDE) COMPARED TO GROUNDWATER LEVEL (INSIDE)											
		Total Q	EW-1 Q	EW-2 Q	EW-3 Q		PZ- 1_OUTSI DE	PZ- 1_INSIDE	Delta	PZ- 2_OUTSI DE	PZ- 2_INSIDE	Delta	PZ- 3_OUTSI DE	PZ- 3_INSIDE	Delta	PZ- 4_OUTSI DE	PZ- 4_INSIDE	Delta
1/1/05	Daily Average	2162.41	747.59	714.81	700.01	383.08	385.13	381.11	-4.02	382.41	383.27	0.85	382.35	382.04	-0.30	384.95	383.40	-1.55
1/2/05	Daily Average	2160.43	747.10	713.34	699.99	382.25	384.59	380.98	-3.61	381.69	383.13	1.44	381.63	381.85	0.22	384.42	383.20	-1.22
1/3/05	Daily Average	791.26	275.70	260.20	255.35	385.14	386.03	383.93	-2.10	384.29	385.88	1.59	384.05	384.56	0.51	385.79	385.23	-0.55
1/4/05	Daily Average	993.52	278.50	485.55	229.48	391.60	389.44	385.17	-4.27	390.03	386.73	-3.30	389.39	386.04	-3.35	388.90	386.73	-2.18
1/5/05	Daily Average	4.85	1.71	3.01	0.14	401.15	394.77	387.61	-7.16	398.91	389.30	-9.61	397.47	389.21	-8.26	393.78	388.89	-4.89
1/6/05	Daily Average	190.90	6.39	184.71	-0.19	408.18	399.18	388.71	-10.47	405.58	390.10	-15.48	403.60	390.88	-12.72	398.25	390.38	-7.88
1/7/05	Daily Average	120.35	6.45	114.13	-0.23	408.37	400.00	389.61	-10.39	405.90	391.08	-14.82	404.04	391.83	-12.21	399.44	391.39	-8.05
1/8/05	Daily Average	180.49	51.76	81.69	47.04	404.28	398.36	390.34	-8.03	402.26	391.93	-10.33	400.88	392.27	-8.61	397.93	391.98	-5.94
1/9/05	Daily Average	118.56	4.93	113.88	-0.25	401.78	397.30	390.95	-6.35	399.98	392.58	-7.40	398.88	392.54	-6.34	396.90	392.45	-4.45
1/10/05	Daily Average	257.04	4.12	253.07	-0.15	399.53	396.29	391.09	-5.20	398.01	392.43	-5.58	397.15	392.33	-4.82	395.95	392.47	-3.48
1/11/05	Daily Average	153.39	3.13	150.34	-0.08	397.77	395.42	391.36	-4.06	396.38	392.85	-3.54	395.70	392.40	-3.30	395.10	392.62	-2.48
1/12/05	Daily Average	521.44	156.85	209.02	155.57	396.81	394.93	390.79	-4.14	395.49	374.69	-20.80	394.87	391.57	-3.30	394.66	392.18	-2.48
1/13/05	Daily Average	342.70	112.05	119.37	111.29	400.00	396.45	390.88	-5.56	398.18	392.59	-5.59	397.24	392.13	-5.11	396.06	392.25	-3.81
1/14/05	Daily Average	20.02	0.14	20.23	-0.35	405.15	399.57	392.49	-7.08	402.95	394.11	-8.84	401.62	394.18	-7.44	399.04	393.94	-5.10
1/15/05	Daily Average	2.86	0.16	3.06	-0.37	405.04	399.96	393.23	-6.73	403.01	394.86	-8.15	401.76	394.89	-6.87	399.42	394.66	-4.76
1/16/05	Daily Average	3.37	0.95	2.77	-0.35	401.78	398.33	393.48	-4.85	400.06	395.15	-4.91	399.17	394.88	-4.30	397.96	394.81	-3.15
1/17/05	Daily Average	8.69	4.20	3.71	0.77	400.17	397.89	164.04	NA	362.41	395.41	NA	397.96	394.95	-3.01	397.30	394.98	-2.32
1/18/05	Daily Average	180.40	144.75	35.65		NA	395.32	393.86	-1.15	394.56	396.64	2.09	394.83	396.48	1.53	397.97	396.28	-1.70
1/19/05	Daily Average	571.05	435.95	135.10		NA	395.31	393.28	-1.97	395.15	394.14	-0.89	394.04	393.70	-0.54	396.40	395.34	-1.06
1/20/05	Daily Average	801.64	6.19	660.15	168.70	395.76	395.13	393.20	-1.93	358.73	393.85	NA	394.40	399.99	-2.15	394.90	393.64	-1.27
1/21/05	Daily Average	965.28	5.94	614.39	470.86	395.49	394.95	392.91	-2.04	394.02	393.11	-0.91	394.13	386.75	NA	322.97	171.07	NA
1/22/05	Daily Average	1130.01	5.81	424.20	700.00	395.31	394.70	392.71	-1.99	393.83	392.89	-0.94	393.76	389.82	-3.94	NA	NA	NA
1/23/05	Daily Average	885.48	1.95	530.65	352.88	392.86	394.18	392.48	-1.70	393.04	392.65	-0.40	393.13	390.41	-2.72	NA	NA	NA
1/24/05	Daily Average	1053.52	40.31	736.33	276.88	393.76	393.85	392.40	-1.45	392.45	392.60	0.24	392.66	390.79	-1.88	392.93	NA	NA
1/25/05	Daily Average	1070.70	19.30	739.70	358.25	393.77	393.85	392.34	-1.51	392.50	392.71	0.22	392.62	390.30	-2.33	392.98	391.96	-1.02
1/26/05	Daily Average	1122.38	36.41	744.99	340.98	393.26	393.41	391.93	-1.48	392.00	392.30	0.29	392.15	389.55	-2.60	392.72	391.68	-1.04
1/27/05	Daily Average	1174.89	78.20	749.95	346.73	392.58	392.93	391.60	-1.32	391.34	392.02	0.68	391.53	389.79	-1.75	392.47	391.43	-1.04
1/28/05	Daily Average	1263.53	120.48	749.91	393.15	391.90	392.50	391.09	-1.41	390.70	391.65	0.95	390.90	389.70	-1.20	392.04	391.07	-0.97
1/29/05	Daily Average	1253.29	98.06	749.35	405.88	391.81	392.40	390.98	-1.42	390.61	391.57	0.96	390.78	389.58	-1.20	391.90	390.93	-0.97
1/30/05	Daily Average	1245.80	93.82	747.26	404.72	391.65	392.26	390.85	-1.41	390.48	391.45	0.98	390.66	389.45	-1.21	391.76	390.80	-0.95
1/31/05	Daily Average	1269.85	113.46	744.06	412.32	391.36	392.02	390.60	-1.42	390.20	391.21	1.01	390.35	389.24	-1.11	391.51	390.57	-0.95

NOTE: - Piezometers were being redeveloped and replaced during the period between January 17 and January 24. Minor calibration adjustments continued through January 27. Some readings in this period are not useable and those values are marked as NA in the above table.